UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
CHAN, SAI MING

ART UNIT	PAPER NUMBER
2462	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _16 February 2001_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,2,6-13,17-26 and 30-45_ is/are pending in the application.
　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1,2,6-13,17-26 and 30-45_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
　　a)☐ All   b)☐ Some * c)☐ None of:
　　　1.☐ Certified copies of the priority documents have been received.
　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.
　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114 was filed in this

application after appeal to the Board of Patent Appeals and Interferences, but prior to a

decision on the appeal. Since this application is eligible for continued examination

under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the

appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this

application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed

on 2/16/2010 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.

4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 6-7, 9, 11-12, 37, 40 & 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043),** in view of **Liva et al. (U.S. Patent Publication #20020136203).**

Consider **claim 1,** Lind et al. clearly disclose and show a method for improving channel efficiency in a broadband communication system that complies with a Data Over Cable Service Interface Specification (DOCSIS) standard, comprising:

establishing one or more proprietary logical channels for communication between a first device that supports at least one proprietary communication parameter (fig. 2 (28 CMTS), fig. 11a (192 & 194)) and other devices that support said at least one proprietary communication parameter (fig. 2 (42 CM), fig. 11a (192 & 194));

receiving registration information from a second device (para. 101), wherein said registration information indicates that said second device supports said at least one proprietary communication parameter (fig. 5a (102));

determining whether said second device may be assigned to one of said one or more proprietary logical channels based on said registration information (fig. 5a (104), paragraphs 119 & 120),

assigning said second device to said one of said one or more proprietary logical

channels when said second device may be assigned to said one of said one or more proprietary logical channels (fig. 5a (102 and 104);

However, Lind et al. do not specially disclose creating a new proprietary logical channel.

In the same field of endeavor, Liva et al. clearly show creating a new proprietary logical channel (para. 0012 (recabling to a new logical channel when capacity is reached)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to demonstrate a channel efficiency method, as taught by Lind, and create logical channels, as taught by Liva, so that communication can be conducted efficiently.

Consider **claim 25,** is rejected for the same reason as set forth in claim 1 except a computer program product (Lind: para. 0074) comprising a computer usable medium having computer program logic (Lind: Para. 0074) recorded thereon for enabling a processor (Lind: para. 0074) to facilitate communication between devices in a broadband communication system (Lind: para. 0075) that complies with a Data Over Cable Service Interface Specification (DOCSIS) standard (Lind: 0075 (DOCSIS)).

Consider **claim 2,** and **as applied to claim 1 above,**

       claim 26, and **as applied to claim 25 above,**

Lind et al. clearly disclose and show a method, wherein said first device comprises a

cable modem termination system (fig. 2 (28 CMTS)) and said second device comprises

a cable modem (fig. 2 (42 CM)).

Consider **claim 6,** and **as applied to claim 1 above,**

claim 30, and **as applied to claim 25 above,**

they are being rejected for the same reason as set forth in claim 1 except the UCD

messages (Lind: para. 0029 (UCD messages)).

Consider **claim 7,** and **as applied to claim 6 above,**

claim 31, and **as applied to claim 30 above,**

Lind et al. clearly disclose and show a method, wherein said generating of a UCD

message comprises generating a message having a version field or a type field (para.

0046) that comprises a value not provided for by the DOCSIS standard (para. 0002).

Consider **claim 9,** and **as applied to claim 8 above,**

claim 33, and **as applied to claim 32 above,**

Lind et al. clearly disclose and show a method, wherein said sending said UCD

message only to devices that support said at least one proprietary communication

parameter comprises:

accessing a database of identifiers of devices (Fig. 10 (182)) that support said at

least one proprietary communication parameter (fig. 10 (182 (parameters of each link)));

generating a unicast UCD message addressed to each of said devices having an

identifier in said database (paragraphs 25-29 (generate UCD message)).

Consider **claim 11, and as applied to claim 1 above,**

claim 35, and as applied to claim 25 above,

Lind et al. clearly disclose and show a method, wherein said receiving said registration

information from a second device comprises:

sending a first message to said second device to determine if said second device

implements any proprietary features (fig. 11a (192));

receiving a message from said second device, wherein said message indicates

support by said second device for said at least one proprietary communication

parameter (fig. 11a (194)); and

sending a second message to said second device, wherein said second unicast

message indicates support by said first device for said at least one proprietary

communication parameter (paragraphs 25-29 (generate UCD message)).

Consider **claim 12, and as applied to claim 1 above,**

claim 36, and as applied to claim 25 above,

they are being rejected for the same reason as set forth in claim 10.

Consider **claim 37, and as applied to claim 1 above,**

claim 39, and **as applied to claim 25 above,**

Lind et al. clearly disclose and show a method, wherein said at least one proprietary

communication parameter includes at least one of a group consisting of a modulation

rate, base rate, and an alpha value (fig. 5a (102,104), para. 0046).

Consider **claim 40**, and **as applied to claim 1 above,**

claim 42, and **as applied to claim 25 above,**

Lind et al. clearly disclose and show a method, wherein said at least one proprietary

communication parameter is not provided for by said DOCSIS standard (para. 0002).

Consider **claim 43**, and **as applied to claim 1 above,**

claim 45, and **as applied to claim 25 above,**

Lind et al. clearly disclose and show a method, further comprising:

assigning said second device to a standard DOCSIS channel when said

predetermined number of currently registered devices does not support said at least

one proprietary communication parameter (para. 0002 (point to multi-point linking),

para. 0019 (work as single DOCSIS channel CMs)).

Claims 8, 10, 32 & 34 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043),** in view of

Liva et al. (U.S. Patent Publication #20020136203), and **in view of Rakib et al. (U.S. Patent Publication # 20050025145)**.

Consider **claim 8, and as applied to claim 1 above,**

claim 32, and as applied to claim 30 above,

Lind et al. clearly disclose and show the method as described.

However, Lind et al. do not specially disclose sending the UCD messages to the intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) only to intended devices (figs. 9a,b & c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Lind, and to send a UCD message to intended devices, as taught by Rakibet, in order to show that the bandwidth efficiency is optimized.

Consider **claim 10, and as applied to claim 8 above,**

claim 34, and as applied to claim 32 above,

Lind et al. clearly disclose and show a method, wherein said sending said message only to devices that support said at least one proprietary communication parameter comprises:

accessing an identifier that identifies a plurality of devices that support said at

least one proprietary communication parameter (para. 0046 (CMTS sends out

parameters of upstream); para. 0047 (CMTS receives messages from CM and store

some of the data)); and.

However, Lind et al. do not specially disclose sending the multicast UCD

message.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream

Channel Descriptor (UCD) message (paragraph 63) a plurality of devices (figs. 9a,b &c;

paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made to incorporate a channel efficiency method, as taught by

Lind et al., and to send a multicast UCD message, as taught by Rakib et al., in order to

show that the bandwidth efficiency is optimized.

Claims 13, 17-24, 38, 41 & 44 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043),** in view of

Liva et al. (U.S. Patent Publication #20020136203), and further in view of **Cloonan et**

al. (U.S. Patent Publication # 2004000863).

Consider **claim 13,** it is being rejected for the same reason as set forth in claim

1, except:

a registration module (Lind: para. 0021 (receiving registration messages))

However, Lind et al. do not specially disclose creating a new proprietary logical channel.

In the same field of endeavor, Liva et al. clearly show creating a new proprietary logical channel (paragraph 0066 (other channel supports legacy channel)) which supports said at least one proprietary communication parameter (paragraph 0096 (each channel is provisioned appropriately for each parameter)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to demonstrate a channel efficiency method, as taught by Lind et al., and create logical channels, as taught by Liva, so that communication can be conducted efficiently.

However, Lind et al. do not specially disclose the upstream channel manager.

In the same field of endeavor, Cloonan et al. clearly show an upstream channel manager (abstract (high level MAP scheduler); fig. 5 (16 (high level MAP scheduler)) paragraph 26, (PHY, for physical channel, can be connected to several logical channels. The low level MAP Scheduler (8) keeps track of which logical channels are tied to which physical channel. The high level MAP scheduler controls the low level MAP scheduler).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to demonstrate a channel efficiency method, as taught by Lind et al., create logical channels, as taught by Liva, and show the upstream channel manager, as taught by Cloonan, so that the system is managed properly.

Consider **claim 17,** it is being rejected for the same reason as set forth in **claim 13.**

Consider **claim 18,** it is being rejected for the same reason as set forth in **claim 6.**

Consider **claim 19,** it is being rejected for the same reason as set forth in **claim 7.**

Consider **claim 20,** it is being rejected for the same reason as set forth in **claim 8.**

Consider **claim 21,** it is being rejected for the same reason as set forth in **claim 9.**

Consider **claim 22,** it is being rejected for the same reason as set forth in **claim 10.**

Consider **claim 23,** it is being rejected for the same reason as set forth in **claim 13.**

Consider **claim 24,** it is being rejected for the same reason as set forth in **claim 12.**

Consider **claim 38,** it is being rejected for the same reason as set forth in **claim 37.**

Consider **claim 41,** it is being rejected for the same reason as set forth in **claim 40.**

Consider **claim 44,** it is being rejected for the same reason as set forth in **claim 43.**

Response to Arguments

Applicant's arguments filed on 2/16/2010, with respect to claims 1, 13 and 25, on pages 12-23 of the remarks, have been carefully considered. Applicants basically argue, that Liva does not teach or suggest "create a new channel and assign logical channels". The Examiner respectfully disagrees because it does mention about creating a new logical channel when the capacity of the channel is reached (Liva: para. 12). Therefore the Examiner maintains his rejection.

In addition, the applicants point out that Bunn is not prior art against the application. The Examiner has introduced a new reference to replace Bunn in the office action. See the above rejections of claims 1, 13 and 25 for the relevant interpretation and citations found in Lind, disclosing the missing limitations.

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

> Commissioner for Patents
> P.O. Box 1450
> Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

> Customer Service Window
> Randolph Building
> 401 Dulany Street
> Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Sai-Ming Chan whose telephone number is (571) 270-1769. The Examiner can normally be reached on Monday-Thursday from 8:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's

supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for

the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist/customer service whose telephone

number is (571) 272-2600.

/Sai-Ming Chan/

Examiner, Art Unit 2462

February 18, 2010

/Kevin C. Harper/

Primary Examiner, Art Unit 2462